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ABSTRACT

This document reports on a project designed to identify and validate the essential competencies needed by agriculture students in order to enter and advance successfully in agricultural occupations in Wyoming. Competency lists and validation studies were collected from other states. A group of vocational agriculture teachers developed a list of competencies essential for job entry in production agriculture. Teachers selected employed persons in the agriculture sector to complete a survey form developed to obtain a rating of the importance of each competency in the high school curriculum. A continuation of the project was recommended to complete collection of data and analysis of the results. An appendix, which comprises the major portion of this report, contains the vocational agriculture competencies surveys for Wyoming. Each list includes the competencies the teachers thought could be taught in high school vocational agriculture programs in the areas of animal science/livestock, crops and soils, farm and ranch management, agricultural mechanics, agribusiness, and leadership and supervised occupational experience. Provision is made for each competency to be ranked by one of the following: "does not apply"; "not important"; "of some importance"; "important"; or "essential." (YLB)

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FINAL REPORT

# Identifying and Validating Essential Job Entry Level Competencies for Vocational Agriculture in Wyoming

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Project No. 59-6887

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Introduction/Statement of the Problem

The primary purpose of this grant was to identify and validate the essential competencies needed in agriculture to successfully enter and advance in agricultural occupations in Wyoming. Since Agriculture represents the third largest industry in the state it was considered essential that these competencies be determined and weighed to provide a data base for planning curriculum in vocational agriculture programs.

Objectives

The primary objective was to develop a list of competencies, to validate them by employers in the industry, and to determine what should be taught in high school vocational agriculture programs. More specifically, the objectives were to:

1. Identify and develop a list of competencies considered to be essential for job entry in production agriculture.

2. Develop a process for validating these competencies by representation of the various segments in the agricultural industry.

3. Initiate the validation process for the essential competencies.

4. Develop a four-year course of study in production agriculture for high school vocational agriculture programs based upon the results of the validation process of the essential competencies list.

It was determined at the time of the proposal that within the time frame and funds allotted, that the list of objectives were too comprehensive to complete. By reviewing similar work done in other states it was determined that the first three objectives were reachable goals within the limitations delineated in the request for proposal.

Population Served

The latest enrollment figures of high school students enrolled in Vocational Agriculture indicate that between 1600-1700 students are influenced by the curriculum. Of this group, approximately 400 graduate each year of which about 40% obtain employment in production agriculture and about 30% enter agribusiness occupations. The validated list of competencies used as a data base for curriculum modification will influence all of these students. The 50 high school vocational agriculture teachers will be involved in the final step, modifying their curriculum to reflect the essential competencies needed for employment in agriculture. In accomplishing the first three objectives of this grant, eleven vocational agriculture teachers were involved in reviewing lists of competencies and developing a list that represented the diversity of agriculture in Wyoming. (See Appendix A). In addition, 70 employers and workers in production and agribusiness were involved in validating the list of competencies developed by the teachers.

Strategies/Procedures

To accomplish the goals of the project, it was indicated that the best pool of experts to utilize were representatives from the teaching profession. By utilizing this group, the job of reviewing and developing essential competencies and contacting employers in the field were made easy.

The procedures were as follows:

1. Agricultural education faculty collected and reviewed competency studies from other states and established a file of sample competency lists and validation procedures.

2. High school vocational agriculture teachers were selected to participate in a seminar based upon their expressed area of expertise.

3. These teachers along with the state agriculture education consultant and agricultural education faculty reviewed the competency lists and validation procedures and developed a comprehensive list of essential competencies pertinent to Wyoming. A procedure for validating this list was also developed.

4. Teachers selected individuals in the agriculture sector to review the lists of competencies and rate the degree of importance for each. These lists were to be returned to the agricultural education faculty upon completion of this task.

Evaluation of Project

As a result of the seminar with vocational agriculture teachers, the following results were obtained.

1. A comprehensive list of essential competencies were developed for each of six categories of instruction
   a. livestock production
   b. crops and soils
   c. farm and ranch management
   d. agricultural mechanics
   e. agribusiness
   f. leadership and supervised occupational experience

2. A survey form for the rating of each competency as to how important it should be taught was developed. (See Appendix B)

3. The survey form was field tested with five groups of people employed in sales and service, ranching and farming, and agricultural mechanization. Modifications were incorporated into the final survey form.

4. Each teacher identified a minimum of six persons engaged in an occupation in agricultural production and agribusiness to validate the competencies.

5. The teachers are presently in process of completing the collection of these surveys.

## Conclusions and Recommendations

The utilization of teachers in a seminar setting was an ideal way to involve the profession in the task of identifying and validating competencies. It is anticipated that the vocational agriculture teachers will better accept the work of this group since they had major input.

Based upon the field test of the initial list of competencies, it is envisioned that a common core of competencies can be developed for vocational agriculture in Wyoming from the data base that this project has initiated. Some individual differences are anticipated in various regions due to the diversity of Wyoming's agriculture as a whole. The validation process, however, will make it easier for the local vocational agriculture teacher to select the essential competencies that should be taught in his/her region.

## Recommendations

The following recommendations seem warranted based upon the results of this project:

1. Involvement of teachers is an essential component of any planning process or data collection procedure involving curriculum.
2. A continuation of this project is needed to complete collection of data and analysis of the results.
3. Once the database has been established, curriculum guidelines need to be updated/revised to incorporate more essential competency-based instruction in the high school vocational agriculture curriculum.

Abstract

The process/products of this project were to identify and develop a list of essential competencies and to develop a process for validating by representatives employed in agriculture. The specific objectives of the proposal were to:

1. identify and develop a list of competencies considered to be essential for job entry in production agriculture.

2. develop a process for validating these competencies by employed persons in the agricultural industry.

3. initiate the validation process for the essential competencies.

The procedures were as follows:

1. Collect competency lists and validation studies from other states. Utilize a group of vocational agriculture teachers to develop a list of essential competencies representative of Wyoming's agriculture.

2. Develop a survey form to obtain a rating of importance that each competency should have in the high school curriculum.

3. Each teacher selected a minimum of six employed persons in agriculture to complete the survey form.

The expected outcomes were as follows:

1. The list of essential competencies will serve as a guide for reviewing curriculum content in vocational agriculture.

2. The survey form will provide a tool for developing a sound database for curriculum decision-making.

3. The preliminary database will influence the vocational agriculture teachers to begin reviewing their present curriculum. This preliminary data will provide the basis for continuing efforts to develop an essential competency-based curriculum for vocational agriculture in Wyoming.

Appendix A, containing names and social security numbers, was deleted to ensure confidentiality.

APPENDIX B

VOCATIONAL AGRICULTURE COMPETENCIES SURVEY FOR WYOMING

The Wyoming Vocational Agriculture Teachers and Agricultural Education Staff at the University of Wyoming are attempting to determine what you think a high school graduate of Vocational Agriculture should know to be employed on the farm or ranch, implement dealership, feed, seed and supply store, ag chemical business or other ag-related businesses.

The attached lists include the competencies we think could be taught in high school Vocational Agriculture in the areas of Animal Science, Crops and Soils, Ag Mechanics, Leadership and Supervised Occupational Experience, Farm and Ranch Management, and Agri-Business. Please rank each competency so that we will have a priority as to which ones are most essential to teach first; then the lesser important ones can be taught later if we have time. Also, please add to the bottom of the lists, any additional competencies that we may have omitted.

If you feel we have competencies listed that do not apply to the nature of your farm, ranch, or business, please mark the "Does not apply" category.

Thank you. Your responses will be most valuable to use in making improvements in our Vocational Agriculture Curriculum.

APPENDIX B

LIVESTOCK COMPETENCY

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 1. Identifying Major breeds of Livestock | | | | | |
| a. Name and identify major breeds of beef | 0 | 1 | 2 | 3 | 4 |
| b. Name and identify major breeds of sheep | 0 | 1 | 2 | 3 | 4 |
| c. Name and identify major breeds of swine | 0 | 1 | 2 | 3 | 4 |
| d. Name and identify major breeds of dairy | 0 | 1 | 2 | 3 | 4 |
| e. Name and identify major breeds of horses | 0 | 1 | 2 | 3 | 4 |
| f. Name and identify major breeds of poultry | 0 | 1 | 2 | 3 | 4 |
| 2. Selecting and evaluating the quality of livestock | | | | | |
| a. Female selection | 0 | 1 | 2 | 3 | 4 |
| b. Sire selection | 0 | 1 | 2 | 3 | 4 |
| c. Feeder animal selection | 0 | 1 | 2 | 3 | 4 |
| d. Oral reasons | 0 | 1 | 2 | 3 | 4 |
| e. Identify the body parts of livestock species | 0 | 1 | 2 | 3 | 4 |
| 3. Determing proper breeding conditions of livestock | | | | | |
| a. Flushing ewes | 0 | 1 | 2 | 3 | 4 |
| b. Flushing sows | 0 | 1 | 2 | 3 | 4 |
| c. Timing for placing sire with females | 0 | 1 | 2 | 3 | 4 |

| | Does not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 4. Caring for females at parturition | 0 | 1 | 2 | 3 | 4 |
| a. Shelter | 0 | 1 | 2 | 3 | 4 |
| b. Sanitation | 0 | 1 | 2 | 3 | 4 |
| c. Using proper equipment | 0 | 1 | 2 | 3 | 4 |
| d. Birthing process | 0 | 1 | 2 | 3 | 4 |
| e. Procedures for abnormal births | 0 | 1 | 2 | 3 | 4 |
| 5. Preventing and treating common diseases | | | | | |
| a. Sanitation | 0 | 1 | 2 | 3 | 4 |
| b. Recognizing common disease symptoms | 0 | 1 | 2 | 3 | 4 |
| c. Proper treatment procedures | 0 | 1 | 2 | 3 | 4 |
| 6. Controlling internal and external parasites | 0 | 1 | 2 | 3 | 4 |
| a. Use of parasite control chemicals | 0 | 1 | 2 | 3 | 4 |
| b. Treatment procedure | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 7. Dehorning, castrating, vaccinating, marking, and branding livestock | | | | | |
| a. Methods of dehorning cattle | 0 | 1 | 2 | 3 | 4 |
| b. Methods of branding cattle and sheep | 0 | 1 | 2 | 3 | 4 |
| c. Methods of castrating livestock | 0 | 1 | 2 | 3 | 4 |
| d. Methods of marking livestock | | | | | |
| e. Methods of vaccinating livestock | 0 | 1 | 2 | 3 | 4 |
| 8. Using performance records in selecting livestock | | | | | |
| a. Genetics | 0 | 1 | 2 | 3 | 4 |
| b. Understand pedigrees | 0 | 1 | 2 | 3 | 4 |
| 9. Maintaining accurate livestock records | | | | | |
| a. Expenses | 0 | 1 | 2 | 3 | 4 |
| b. Income | 0 | 1 | 2 | 3 | 4 |
| c. Reproduction | 0 | 1 | 2 | 3 | 4 |
| d. Important dates | 0 | 1 | 2 | 3 | 4 |
| e. Budget | 0 | 1 | 2 | 3 | 4 |
| f. Inventory | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 10. Caring for the sire | | | | | |
| a. Semen testing | 0 | 1 | 2 | 3 | 4 |
| b. Feeding | 0 | 1 | 2 | 3 | 4 |
| 11. Selecting proper sire to female ratio | | | | | |
| a. Breeding capabilities of each species | 0 | 1 | 2 | 3 | 4 |
| b. Climatic conditions | 0 | 1 | 2 | 3 | 4 |
| 12. Becoming aware of the Artificial Insemination Process | | | | | |
| a. Heat detection | 0 | 1 | 2 | 3 | 4 |
| b. Equipment needed | 0 | 1 | 2 | 3 | 4 |
| c. Labor requirements | 0 | 1 | 2 | 3 | 4 |
| d. Procedures to follow | 0 | 1 | 2 | 3 | 4 |
| e. Semen selection | 0 | 1 | 2 | 3 | 4 |
| f. Estrus Cycles | 0 | 1 | 2 | 3 | 4 |
| g. Best time to breed | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 13. Identifying parts of reproductive tracts | | | | | |
| a) Male | 0 | 1 | 2 | 3 | 4 |
| b) Female | 0 | 1 | 2 | 3 | 4 |
| 14. Understanding the digestive systems | | | | | |
| a) Digestive tract of beef and sheep | 0 | 1 | 2 | 3 | 4 |
| b) Digestive tract of swine | 0 | 1 | 2 | 3 | 4 |
| c) Digestive tract of horse | 0 | 1 | 2 | 3 | 4 |
| d) Digestive tract of poultry | 0 | 1 | 2 | 3 | 4 |
| 15. Determining range carrying capacities and rotation systems | | | | | |
| a) A.U.M.s | 0 | 1 | 2 | 3 | 4 |
| b) Pasture rotation systems | 0 | 1 | 2 | 3 | 4 |
| c) Placement of salt and water | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 16. Identifying livestock nutrient needs | | | | | |
| a) Balance a ration | 0 | 1 | 2 | 3 | 4 |
| b) Use of additive and growth stimulents | 0 | 1 | 2 | 3 | 4 |
| c) Understanding animal requirements | 0 | 1 | 2 | 3 | 4 |
| 17. Classifying and compostion of feeds | | | | | |
| a) Reading and understanding feed tags | | | | | |
| b) Roughages | | | | | |
| c) Concentrates | | | | | |
| d) Feed stuff values | 0 | 1 | 2 | 3 | 4 |
| 18. Identifying market grades and classes of livestock | | | | | |
| a) Yield grades | 0 | 1 | 2 | 3 | 4 |
| b) Quality grades | 0 | 1 | 2 | 3 | 4 |
| c) Feeder grades | 0 | 1 | 2 | 3 | 4 |
| d) Grades of eggs | 0 | 1 | 2 | 3 | 4 |
| e) Dressed poultry grades | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 19. Identifying different marketing systems | | | | | |
| a) Sale barns | 0 | 1 | 2 | 3 | 4 |
| b) Video sales | 0 | 1 | 2 | 3 | 4 |
| c) Buyers | 0 | 1 | 2 | 3 | 4 |
| 20. Understanding livestock buying and selling trends and cycles | | | | | |
| a. Time cycles for each species | 0 | 1 | 2 | 3 | 4 |
| b. Futures | 0 | 1 | 2 | 3 | 4 |
| 21. Determing livestock transportation needs | | | | | |
| a. Distance to market | 0 | 1 | 2 | 3 | 4 |
| b. Shrinkage | 0 | 1 | 2 | 3 | 4 |
| c. Space requirements per animal | 0 | 1 | 2 | 3 | 4 |
| d. Brand and health requirements | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 22. Butchering livestock | | | | | |
| a. Killing | 0 | 1 | 2 | 3 | 4 |
| b. Spining | 0 | 1 | 2 | 3 | 4 |
| c. Gutting | 0 | 1 | 2 | 3 | 4 |
| d. Cooling | 0 | 1 | 2 | 3 | 4 |
| 23. Becoming acquainted with cutting carcasses | | | | | |
| a. Identify retail cuts | 0 | 1 | 2 | 3 | 4 |
| b. Identify wholesale cuts | 0 | 1 | 2 | 3 | 4 |
| c. Grade carcasses | 0 | 1 | 2 | 3 | 4 |
| d. Identify cuts of each species | 0 | 1 | 2 | 3 | 4 |
| 24. Grooming and showing livestock | | | | | |
| a. Clipping | 0 | 1 | 2 | 3 | 4 |
| b. Shearing | 0 | 1 | 2 | 3 | 4 |
| c. Washing | 0 | 1 | 2 | 3 | 4 |
| d. Handling | 0 | 1 | 2 | 3 | 4 |
| e. Fitting | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 25. Other | | | | | |
| a. | 0 | 1 | 2 | 3 | 4 |
| b. | 0 | 1 | 2 | 3 | 4 |
| c. | 0 | 1 | 2 | 3 | 4 |

## APPENDIX B

## CROPS AND SOILS

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 1. Plant growth | | | | | |
| a. Identify parts of a seed | 0 | 1 | 2 | 3 | 4 |
| b. Explain germination and emergence | 0 | 1 | 2 | 3 | 4 |
| c. Explain photosynthesis | 0 | 1 | 2 | 3 | 4 |
| d. Explain growth and life cycles | 0 | 1 | 2 | 3 | 4 |
| e. Identify parts of a plant and functions | 0 | 1 | 2 | 3 | 4 |
| f. Explain plant growth requirements | 0 | 1 | 2 | 3 | 4 |
| 2. Identification and classification | | | | | |
| a. Identify crop plants | 0 | 1 | 2 | 3 | 4 |
| b. Identify range plants | 0 | 1 | 2 | 3 | 4 |
| c. Identify seeds | 0 | 1 | 2 | 3 | 4 |
| d. Identify weeds | 0 | 1 | 2 | 3 | 4 |
| e. Classify plants by life cycle | 0 | 1 | 2 | 3 | 4 |
| f. Classify plants by class (grass, non weed, legume, crop, etc) | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 3. Selection of crops | | | | | |
| a. Identify crops with growing conditions that match climate | 0 | 1 | 2 | 3 | 4 |
| b. Become aware of uses and outlets for crops | 0 | 1 | 2 | 3 | 4 |
| c. Selecting quality seed | 0 | 1 | 2 | 3 | 4 |
| d. Selecting cover crops | 0 | 1 | 2 | 3 | 4 |
| 4. Soils | | | | | |
| a. Identify types of soils | 0 | 1 | 2 | 3 | 4 |
| b. Explain characteristics of classes of soils | 0 | 1 | 2 | 3 | 4 |
| c. Explain soil improvement methods | 0 | 1 | 2 | 3 | 4 |
| d. Identify types of erosion | 0 | 1 | 2 | 3 | 4 |
| e. Explain methods to control erosion | 0 | 1 | 2 | 3 | 4 |
| f. Take and interpret a soil test | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| **5. Farming practices** | | | | | |
| a. Describe tillage methods | 0 | 1 | 2 | 3 | 4 |
| b. Describe cropping systems | 0 | 1 | 2 | 3 | 4 |
| c. Describe practices used in seed bed preparation | 0 | 1 | 2 | 3 | 4 |
| d. List seeding methods | 0 | 1 | 2 | 3 | 4 |
| e. Be aware of seeding rates, time and depth | 0 | 1 | 2 | 3 | 4 |
| f. Describe methods of cultivation | 0 | 1 | 2 | 3 | 4 |
| e. Describe harvest methods and times | 0 | 1 | 2 | 3 | 4 |
| **6. Fertilizers** | | | | | |
| a. Identify composition of a fertilizer | 0 | 1 | 2 | 3 | 4 |
| b. Identify mineral deficiencies in plants | 0 | 1 | 2 | 3 | 4 |
| c. Describe methods of application | 0 | 1 | 2 | 3 | 4 |
| d. Determine rate and time of application | 0 | 1 | 2 | 3 | 4 |
| e. Calculate costs of increasing yields | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 7. Irrigation | | | | | |
| a. Identify methods of irrigation | 0 | 1 | 2 | 3 | 4 |
| b. Evaluate efficiency of irrigation systems | 0 | 1 | 2 | 3 | 4 |
| c. Planning an irrigation system | 0 | 1 | 2 | 3 | 4 |
| d. Developing water sources | 0 | 1 | 2 | 3 | 4 |
| e. Measuring volume and flow rates of water | 0 | 1 | 2 | 3 | 4 |
| 8. Ag Chemicals | | | | | |
| a. Identify harmful insects | 0 | 1 | 2 | 3 | 4 |
| b. Identify harmful weeds | 0 | 1 | 2 | 3 | 4 |
| c. Identify plant diseases | 0 | 1 | 2 | 3 | 4 |
| d. Explain the use of herbicides, pesticides, and fungicides | 0 | 1 | 2 | 3 | 4 |
| e. Be aware of safety precautions | 0 | 1 | 2 | 3 | 4 |
| f. Interpreting labels | 0 | 1 | 2 | 3 | 4 |
| g. Calibrating sprayers | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 9. Range management | | | | | |
| a. Identify invaders, increasers, decreasers, etc. | 0 | 1 | 2 | 3 | 4 |
| b. Calculate carrying capacities of range sites | 0 | 1 | 2 | 3 | 4 |
| c. Plan rotation systems | 0 | 1 | 2 | 3 | 4 |
| d. Develop a range management plan | 0 | 1 | 2 | 3 | 4 |
| 10. Seed and crop quality | | | | | |
| a. Grade grain | 0 | 1 | 2 | 3 | 4 |
| b. Evaluate forage quality | 0 | 1 | 2 | 3 | 4 |
| c. Requirements of seed certification | 0 | 1 | 2 | 3 | 4 |
| d. Seed analysis | 0 | 1 | 2 | 3 | 4 |
| 11. Marketing | | | | | |
| a. Calculate production cost | 0 | 1 | 2 | 3 | 4 |
| b. Calculate marketing costs | 0 | 1 | 2 | 3 | 4 |
| c. Use futures market | 0 | 1 | 2 | 3 | 4 |
| d. Explore market outlets | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 12. Government programs | | | | | |
| a. Describe the function of the SCS | 0 | 1 | 2 | 3 | 4 |
| b. Describe the function of the ASCS | 0 | 1 | 2 | 3 | 4 |
| c. Be aware of government price support programs | 0 | 1 | 2 | 3 | 4 |
| 13. Other | | | | | |
| a. | 0 | 1 | 2 | 3 | 4 |
| b. | 0 | 1 | 2 | 3 | 4 |
| c. | 0 | 1 | 2 | 3 | 4 |

APPENDIX B

| FARM AND RANCH MANAGEMENT COMPETENCIES | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| Be able to: | | | | | |
| 1. Identify credit instruments | 0 | 1 | 2 | 3 | 4 |
| 2. Write a check | 0 | 1 | 2 | 3 | 4 |
| 3. Calculate interest and interest rate when given a problem and a formula | 0 | 1 | 2 | 3 | 4 |
| 4. Evaluate a family insurance program and make recommendations for improvements | 0 | 1 | 2 | 3 | 4 |
| 5. Plot demand and supply curves | 0 | 1 | 2 | 3 | 4 |
| 6. Market small grains and livestock | 0 | 1 | 2 | 3 | 4 |
| 7. Interpret market information | 0 | 1 | 2 | 3 | 4 |
| 8. Calculate budgeting problems | 0 | 1 | 2 | 3 | 4 |
| 9. Develop a budget that fits the farm or business operation | 0 | 1 | 2 | 3 | 4 |
| 10. Select the standard rate of rent for cropland and pastureland for local community | 0 | 1 | 2 | 3 | 4 |
| 11. Calculate leasing rates | 0 | 1 | 2 | 3 | 4 |
| 12. Complete a lease agreement | 0 | 1 | 2 | 3 | 4 |
| 13. Appraise land | 0 | 1 | 2 | 3 | 4 |
| 14. Measure fields and farms | 0 | 1 | 2 | 3 | 4 |

| | | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|---|
| 15. | Figure depreciation of farm property | 0 | 1 | 2 | 3 | 4 |
| 16. | Classify assets into current, intermediate, and long term | 0 | 1 | 2 | 3 | 4 |
| 17. | Complete a net worth statement | 0 | 1 | 2 | 3 | 4 |
| 18. | Match sources of credit with advantages and disadvantages of each source | 0 | 1 | 2 | 3 | 4 |
| 19. | Complete Schedule F and transfer information to a 1040 tax form | 0 | 1 | 2 | 3 | 4 |
| 20. | Determine the required capacity of a machine | 0 | 1 | 2 | 3 | 4 |
| 21. | Estimate the machine capacity | 0 | 1 | 2 | 3 | 4 |
| 22. | Estimate the operating cost of machinery | 0 | 1 | 2 | 3 | 4 |
| 23. | Estimate annual fixed cost of machinery | 0 | 1 | 2 | 3 | 4 |
| 24. | Determine if it is cheaper to own a machine or hire the custom operator | 0 | 1 | 2 | 3 | 4 |
| 25. | Determine the number of acres a machine must be used to break even with present custom rate | 0 | 1 | 2 | 3 | 4 |
| 26. | Determine machinery annual fixed cost | 0 | 1 | 2 | 3 | 4 |
| 27. | Determine machinery fuel cost per acre | 0 | 1 | 2 | 3 | 4 |
| 28. | Determine machinery repair cost per acre | 0 | 1 | 2 | 3 | 4 |
| 29. | Determine labor cost per acre | 0 | 1 | 2 | 3 | 4 |
| 30. | Tell about social security program | 0 | 1 | 2 | 3 | 4 |

| | | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|---|
| 31. | Be familiar with farm law | 0 | 1 | 2 | 3 | 4 |
| 32. | Identify tools that take the risk out of marketing livestock and small grains | 0 | 1 | 2 | 3 | 4 |
| 33. | Be familiar with partnerships, corporations, and ownerships | 0 | 1 | 2 | 3 | 4 |
| 34. | Manage taxes to maximize income | 0 | 1 | 2 | 3 | 4 |
| 35. | Other | | | | | |
| | a. | 0 | 1 | 2 | 3 | 4 |
| | b. | 0 | 1 | 2 | 3 | 4 |
| | c. | 0 | 1 | 2 | 3 | 4 |

APPENDIX B

AGRICULTURAL MECHANICS COMPETENCIES

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 1. Shop tools and equipment | | | | | |
| a) Identifying tools and equipment | 0 | 1 | 2 | 3 | 4 |
| b) Twist drill sharpening | 0 | 1 | 2 | 3 | 4 |
| c) Cold chisel sharpening | 0 | 1 | 2 | 3 | 4 |
| d) Screwdriver reconditioning | 0 | 1 | 2 | 3 | 4 |
| e) Wood chisel sharpening | 0 | 1 | 2 | 3 | 4 |
| 2. Home farm shop maintenance | 0 | 1 | 2 | 3 | 4 |
| a) Maintaining a clean and orderly shop area | 0 | 1 | 2 | 3 | 4 |
| b) Fire fighting equipment understanding | 0 | 1 | 2 | 3 | 4 |
| c) Air Compressor use and care | 0 | 1 | 2 | 3 | 4 |
| d) Inventorying and ordering supplies, tools and equipment | 0 | 1 | 2 | 3 | 4 |
| e) Properly installing power driven equipment | 0 | 1 | 2 | 3 | 4 |
| f) Understanding of all areas pertaining to farm shop and equipment | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 3. Use of drawings and blueprints | | | | | |
| a) Reading and interpreting drawings and blueprints | 0 | 1 | 2 | 3 | 4 |
| b) Figuring a bill of material | 0 | 1 | 2 | 3 | 4 |
| c) Making of freehand sketches | 0 | 1 | 2 | 3 | 4 |
| d) Making of drawings of projects to scale | 0 | 1 | 2 | 3 | 4 |
| 4. Farm Carpentry Skills | | | | | |
| a) Operate power saws | 0 | 1 | 2 | 3 | 4 |
| b) Saw to dimension with hand and/or power saws | 0 | 1 | 2 | 3 | 4 |
| c) Selecting appropriate fasteners (hinges, nails, etc.) | 0 | 1 | 2 | 3 | 4 |
| d) Laying out and constructing small buildings | 0 | 1 | 2 | 3 | 4 |
| 5. Properly using paint and paint equipment | | | | | |
| a) Clean and store spray equipment | 0 | 1 | 2 | 3 | 4 |
| b) Properly clean and store paint brushes and rollers | 0 | 1 | 2 | 3 | 4 |
| c) Prepare metal and wood surface | 0 | 1 | 2 | 3 | 4 |
| d) Apply paint with a spray gun | 0 | 1 | 2 | 3 | 4 |
| e) Apply paint with brush and roller | 0 | 1 | 2 | 3 | 4 |
| f) Clean paints and preservatives | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 6. Operating and welding with an Arc Welder | | | | | |
| a) Practice safety in arc welding | 0 | 1 | 2 | 3 | 4 |
| b) Operating AC/DC welders | 0 | 1 | 2 | 3 | 4 |
| c) Selecting electrodes | 0 | 1 | 2 | 3 | 4 |
| d) Preparing metal for welding and striking an arc | 0 | 1 | 2 | 3 | 4 |
| e) Making various arc welds, i.e.: butt weld, cap welds, fillet welds, vertical and horizontal welds | 0 | 1 | 2 | 3 | 4 |
| f) Hard surfacing | 0 | 1 | 2 | 3 | 4 |
| g) Punching holes and cutting with electric arc | 0 | 1 | 2 | 3 | 4 |
| h) Operating metal inert gas (MIG) welder | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 7. Operating and welding with an oxy-acetylene welder | | | | | |
| a) Checking for leaks | 0 | 1 | 2 | 3 | 4 |
| b) Turning on and shutting off the oxy-acetylene welder | 0 | 1 | 2 | 3 | 4 |
| c) Adjusting pressure at the regulators | 0 | 1 | 2 | 3 | 4 |
| d) Changing cylinders | 0 | 1 | 2 | 3 | 4 |
| e) Lighting and adjusting the flame | 0 | 1 | 2 | 3 | 4 |
| f) Cutting with the cutting torch | 0 | 1 | 2 | 3 | 4 |
| g) Choosing proper tip size and cleaning tips | 0 | 1 | 2 | 3 | 4 |
| h) Brazing different types and thicknesses of metal | 0 | 1 | 2 | 3 | 4 |
| i) Making various types of oxy-acetylene welds, i.e.: butt welds, lap welds, fillet welds, vertical welds | 0 | 1 | 2 | 3 | 4 |
| 8. Performing hot and cold metal work | | | | | |
| a) Cutting threads with tap and die | 0 | 1 | 2 | 3 | 4 |
| b) Drilling holes | 0 | 1 | 2 | 3 | 4 |
| c) Using files | 0 | 1 | 2 | 3 | 4 |
| d) Identifying welds | 0 | 1 | 2 | 3 | 4 |
| e) Anneal, harden, temper and draw-out metal | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 9. Concrete and Masonry skills | | | | | |
| a) Mixing, pouring, curing, and troweling concrete | 0 | 1 | 2 | 3 | 4 |
| b) Building, preparing and removing forms | 0 | 1 | 2 | 3 | 4 |
| c) Drilling holes and embedding bolts in concrete | 0 | 1 | 2 | 3 | 4 |
| d) Edge concrete | 0 | 1 | 2 | 3 | 4 |
| e) Laying of blocks and bricks | 0 | 1 | 2 | 3 | 4 |
| 10. Farm engine operation and maintenance | | | | | |
| a) Servicing of all filters, batteries, belts, etc. | 0 | 1 | 2 | 3 | 4 |
| b) Read and understand operators manual | 0 | 1 | 2 | 3 | 4 |
| c) Troubleshoot and identify fuel and ignition problems | 0 | 1 | 2 | 3 | 4 |
| d) Gain a basic understanding of small gasoline engines | 0 | 1 | 2 | 3 | 4 |
| 11. Chain saws | | | | | |
| a) Sharpening saw chains | 0 | 1 | 2 | 3 | 4 |
| b) Adjusting and maintaining chainsaws | 0 | 1 | 2 | 3 | 4 |
| c) Tuning up and repairing chainsaws | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 12. Minor tuneup and repairing of farm engines | | | | | |
| a) Clean, gap and install plugs and points | 0 | 1 | 2 | 3 | 4 |
| b) Install condensors | 0 | 1 | 2 | 3 | 4 |
| c) Adjust carburetor | 0 | 1 | 2 | 3 | 4 |
| d) Time engines using timing light | 0 | 1 | 2 | 3 | 4 |
| e) Setting breaker points using a dwell meter | 0 | 1 | 2 | 3 | 4 |
| f) Troubleshoot and repair charging system | 0 | 1 | 2 | 3 | 4 |
| 13. Operating and maintaining trucks and tractors | | | | | |
| a) Operation of tractors | 0 | 1 | 2 | 3 | 4 |
| b) Properly servicing of cooling systems | 0 | 1 | 2 | 3 | 4 |
| c) Repack and adjust front wheel bearings | 0 | 1 | 2 | 3 | 4 |
| d) Adjusting brakes and clutches | 0 | 1 | 2 | 3 | 4 |
| e) Remove, mount and service tires include wheel weight mounting | 0 | 1 | 2 | 3 | 4 |
| f) Operating mechanical loading equipment | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 14. Repairing trucks and tractors | | | | | |
| a) Check and replace water hoses, fan belts, thermostats, water pumps | 0 | 1 | 2 | 3 | 4 |
| b) Bleed brake lines | 0 | 1 | 2 | 3 | 4 |
| c) Service power steering and governor | 0 | 1 | 2 | 3 | 4 |
| d) Replace voltage regulator | 0 | 1 | 2 | 3 | 4 |
| e) Locate problems in electrical system | 0 | 1 | 2 | 3 | 4 |
| f) Use electronic test equipment to locate problems | 0 | 1 | 2 | 3 | 4 |
| 15. Servicing hydraulic systems of trucks and tractors | | | | | |
| a) Drain, clean, flush and refill hydraulic systems | 0 | 1 | 2 | 3 | 4 |
| b) Clean and replace lines, "O" rings fittings, connections | 0 | 1 | 2 | 3 | 4 |
| c) Troubleshoot hydraulic systems | 0 | 1 | 2 | 3 | 4 |
| d) Install new hydraulic system filters | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 16. Operating and maintaining farm machinery | | | | | |
| a) Read and understand operator's manual. | 0 | 1 | 2 | 3 | 4 |
| b) Make adjustments properly | 0 | 1 | 2 | 3 | 4 |
| c) Clean and lubricate equipment | 0 | 1 | 2 | 3 | 4 |
| d) Hitch implements | 0 | 1 | 2 | 3 | 4 |
| e) Troubleshoot machines | 0 | 1 | 2 | 3 | 4 |
| f) Replace or repair V-belts, bearings, reces, chains, etc. | 0 | 1 | 2 | 3 | 4 |
| g) Assemble farm machinery | 0 | 1 | 2 | 3 | 4 |
| 17. Repairing power systems | | | | | |
| a) Attaching and Maintaining PTO shaft | 0 | 1 | 2 | 3 | 4 |
| b) Adjusting belt tensions | 0 | 1 | 2 | 3 | 4 |
| c) Sizing and replacing belts and V-belts | 0 | 1 | 2 | 3 | 4 |
| d) Adjust sprocket chains and wheels | 0 | 1 | 2 | 3 | 4 |
| e) Adjust belts and pulleys for proper speed | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 18. Learning rural electrification skills | | | | | |
| a) Use safety measures in electrical wiring | 0 | 1 | 2 | 3 | 4 |
| b) Making electrical wire splices | 0 | 1 | 2 | 3 | 4 |
| c) Repairing electrical cords | 0 | 1 | 2 | 3 | 4 |
| d) Select wire sizes | 0 | 1 | 2 | 3 | 4 |
| e) Wiring single pole three-way, and four-way | 0 | 1 | 2 | 3 | 4 |
| f) Learning electrical terminology, i.e.: volts, amp, watts, ohms | 0 | 1 | 2 | 3 | 4 |
| 19. Operating and Maintaining Electric Motors | | | | | |
| a) Operating and maintaining electrical motors properly | 0 | 1 | 2 | 3 | 4 |
| b) Identifying and selecting electric motors | 0 | 1 | 2 | 3 | 4 |
| c) Changing direction of rotation of electric motors | 0 | 1 | 2 | 3 | 4 |
| d) Changing electric motors from 120 volts to 240 volts or visa versa | 0 | 1 | 2 | 3 | 4 |
| e) Repairing electric motors | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 20. Learning Home Convenience and Sanitation Skills | | | | | |
| a) Repairing leaky faucets | 0 | 1 | 2 | 3 | 4 |
| b) Thread and assemble pipe and pipe fittings | 0 | 1 | 2 | 3 | 4 |
| c) Measure and cut iron and plastic tubing and pipe | 0 | 1 | 2 | 3 | 4 |
| d) Flaring and cutting copper tubing | 0 | 1 | 2 | 3 | 4 |
| e) Ream pipe | 0 | 1 | 2 | 3 | 4 |
| f) Sweating joints on copper pipe | 0 | 1 | 2 | 3 | 4 |
| g) Install fixtures on plastic pipe | 0 | 1 | 2 | 3 | 4 |
| 21. Surveying and using surveying equipments | | | | | |
| a) Measuring fields with wheels, tapes, chains or A-frames | 0 | 1 | 2 | 3 | 4 |
| b) Setting up the farm level | 0 | 1 | 2 | 3 | 4 |
| c) Measuring slopes and determing elevations with farm level | 0 | 1 | 2 | 3 | 4 |
| d) Laying out lines to grade | 0 | 1 | 2 | 3 | 4 |
| e) Laying out building foundations with farm level | 0 | 1 | 2 | 3 | 4 |
| f) Staking out a ditch | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 22. Performing skills used in irrigation and drainage | | | | | |
| a) Starting irrigation pumps | 0 | 1 | 2 | 3 | 4 |
| b) Packing and adjusting packing glands on pumps | 0 | 1 | 2 | 3 | 4 |
| c) Calculating amount of water applied | 0 | 1 | 2 | 3 | 4 |
| d) Repairing sprinkler heads | 0 | 1 | 2 | 3 | 4 |
| e) Laying out irrigation systems | 0 | 1 | 2 | 3 | 4 |
| 23. Building and repairing farm fences | | | | | |
| a) Construct corner posts and braces | 0 | 1 | 2 | 3 | 4 |
| b) Repair fences by splicing, stretching, stapling or tying | 0 | 1 | 2 | 3 | 4 |
| c) Building wire gates | 0 | 1 | 2 | 3 | 4 |
| d) Laying out fence lines | 0 | 1 | 2 | 3 | 4 |
| e) Trouble shooting electric fences | 0 | 1 | 2 | 3 | 4 |
| 24. Repairing and constructing farm buildings | | | | | |
| a) Evaluate, remodel and repair existing buildings | 0 | 1 | 2 | 3 | 4 |
| b) Assisting in planning and construction of new building | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 25. Repairing and constructing livestock equipments | | | | | |
| a) Constructing livestock equipment for handling, feeding, grooming, etc | 0 | 1 | 2 | 3 | 4 |
| b) Using and maintaining livestock equipment | 0 | 1 | 2 | 3 | 4 |
| 26. Other | | | | | |
| a) | 0 | 1 | 2 | 3 | 4 |
| b) | 0 | 1 | 2 | 3 | 4 |
| c) | 0 | 1 | 2 | 3 | 4 |

| AGRIBUSINESS COMPETENCIES | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| I. Sales and Service | | | | | |
| 1. Read and interpret a feed tag | 0 | 1 | 2 | 3 | 4 |
| 2. Recommend feeding programs | 0 | 1 | 2 | 3 | 4 |
| 3. Balance rations for all species | 0 | 1 | 2 | 3 | 4 |
| 4. Understand feed additives and medications | 0 | 1 | 2 | 3 | 4 |
| 5. Formulate feeds to fit customers needs | 0 | 1 | 2 | 3 | 4 |
| 6. Read and obey safety precautions | 0 | 1 | 2 | 3 | 4 |
| 7. Use of telephone | 0 | 1 | 2 | 3 | 4 |
| 8. Accept supervision | 0 | 1 | 2 | 3 | 4 |
| 9. Ability to combat fire | 0 | 1 | 2 | 3 | 4 |
| 10. Fill out charge and sales slip | 0 | 1 | 2 | 3 | 4 |
| 11. Be able to read a supply catalog | 0 | 1 | 2 | 3 | 4 |
| 12. Be able to operate small equipment, i.e.: forklift, skid loader | 0 | 1 | 2 | 3 | 4 |
| 13. Be able to run a cash register | 0 | 1 | 2 | 3 | 4 |
| 14. Be able to make change | 0 | 1 | 2 | 3 | 4 |
| 15. Be able to fill out an order form | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 16. Knowledge of proper storage procedures | 0 | 1 | 2 | 3 | 4 |
| 17. Have knowledge of pest control | 0 | 1 | 2 | 3 | 4 |
| 18. Be able to give verbal instructions | 0 | 1 | 2 | 3 | 4 |
| II. Resources | | | | | |
| 1. Set up a transit | 0 | 1 | 2 | 3 | 4 |
| 2. Read and record survey information | 0 | 1 | 2 | 3 | 4 |
| 3. Locate and identify farm and field boundaries | 0 | 1 | 2 | 3 | 4 |
| 4. Run a profile | 0 | 1 | 2 | 3 | 4 |
| 5. Use a core and probe | 0 | 1 | 2 | 3 | 4 |
| 6. Use soil testing equipment | 0 | 1 | 2 | 3 | 4 |
| 7. Measure water flow | 0 | 1 | 2 | 3 | 4 |
| 8. Identify proper use of water | 0 | 1 | 2 | 3 | 4 |
| 9. Identify and detect unclean air | 0 | 1 | 2 | 3 | 4 |
| 10. Use and plan proper ventilation system | 0 | 1 | 2 | 3 | 4 |
| 11. Acquire an appreciation for wildlife | 0 | 1 | 2 | 3 | 4 |
| 12. Dressing wild game | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 13. Develop an understanding of wildlife and predator impact on Wyoming agriculture | 0 | 1 | 2 | 3 | 4 |
| 14. Develop an understanding of recreation in Wyoming | 0 | 1 | 2 | 3 | 4 |
| III. Production Agriculture | | | | | |
| 1. Know when to harvest crops | 0 | 1 | 2 | 3 | 4 |
| 2. Know how to service equipment (baler tension, grease) | 0 | 1 | 2 | 3 | 4 |
| 3. Know how to figure shrinkage | 0 | 1 | 2 | 3 | 4 |
| 4. Know how to maintain and operate scales and weights | 0 | 1 | 2 | 3 | 4 |
| 5. Buying and selling in the area | 0 | 1 | 2 | 3 | 4 |
| 6. Understand futures and contract | 0 | 1 | 2 | 3 | 4 |
| 7. Understand marketing trends | 0 | 1 | 2 | 3 | 4 |
| 8. Understanding occupational and labor laws | 0 | 1 | 2 | 3 | 4 |
| 9. Ability to know and perform measurement in Ag enterprises of quality control | 0 | 1 | 2 | 3 | 4 |
| 10. Be able to interpret custom labor contracts | 0 | 1 | 2 | 3 | 4 |
| 11. Understand fencing practices | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| IV. Ag Mechanics | | | | | |
| 1. Understand principles of gas and diesel engines | 0 | 1 | 2 | 3 | 4 |
| 2. Read blue prints | 0 | 1 | 2 | 3 | 4 |
| 3. Assemble parts | 0 | 1 | 2 | 3 | 4 |
| 4. Order parts | 0 | 1 | 2 | 3 | 4 |
| 5. Package and crate equipment | 0 | 1 | 2 | 3 | 4 |
| 6. Paint removal and repaint | 0 | 1 | 2 | 3 | 4 |
| 7. Cutting and flaring tubing | 0 | 1 | 2 | 3 | 4 |
| 8. Reading and interpreting technical/service manuals | 0 | 1 | 2 | 3 | 4 |
| 9. Tool I.D. and use | 0 | 1 | 2 | 3 | 4 |
| 10. Tool selection and purchase | 0 | 1 | 2 | 3 | 4 |
| 11. Operate electronic indexing equipment | 0 | 1 | 2 | 3 | 4 |
| 12. Operate laminator and copying machine | 0 | 1 | 2 | 3 | 4 |
| 13. Understand uses, qualities and capabilities of equipment | 0 | 1 | 2 | 3 | 4 |
| 14. Operating electronics test equipment | 0 | 1 | 2 | 3 | 4 |
| 15. Reading wiring diagrams. | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| V. Forestry | | | | | |
| 1. Learn method of reforestation | 0 | 1 | 2 | 3 | 4 |
| 2. Identify trees and shrubs | 0 | 1 | 2 | 3 | 4 |
| 3. Understand fire fighting safety precautions and methods | 0 | 1 | 2 | 3 | 4 |
| 4. Ability to classify trees | 0 | 1 | 2 | 3 | 4 |
| 5. Planting trees | 0 | 1 | 2 | 3 | 4 |
| 6. Figure board feet and cost/M | 0 | 1 | 2 | 3 | 4 |
| 7. Determine age and volume of trees | 0 | 1 | 2 | 3 | 4 |
| 8. Operate and maintain a chain saw | 0 | 1 | 2 | 3 | 4 |
| 9. Identify diseases and pests of trees | 0 | 1 | 2 | 3 | 4 |
| 10. Use a compass | 0 | 1 | 2 | 3 | 4 |
| 11. Determine tree populations | 0 | 1 | 2 | 3 | 4 |
| 12. Know methods of tree harvest | 0 | 1 | 2 | 3 | 4 |
| 13. Thinning timber | 0 | 1 | 2 | 3 | 4 |
| VI. Horticulture | | | | | |
| 1. Make a soil mixture | 0 | 1 | 2 | 3 | 4 |

| | | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|---|
| 2. | Identify soil particles | 0 | 1 | 2 | 3 | 4 |
| 3. | Take and test a soil sample | 0 | 1 | 2 | 3 | 4 |
| 4. | List primary, secondary and trace minerals required for plant growth | 0 | 1 | 2 | 3 | 4 |
| 5. | Read and understand fertilizer labels | 0 | 1 | 2 | 3 | 4 |
| 6. | Apply fertilizers correctly | 0 | 1 | 2 | 3 | 4 |
| 7. | Figure cost per lb. of available (NPK) fertilizer | 0 | 1 | 2 | 3 | 4 |
| 8. | Plan and plant a windbreak | 0 | 1 | 2 | 3 | 4 |
| 9. | Prune a tree | 0 | 1 | 2 | 3 | 4 |
| 10. | Shear a tree or hedge | 0 | 1 | 2 | 3 | 4 |
| 11. | Apply water to lawns and plants | 0 | 1 | 2 | 3 | 4 |
| 12. | Repair and replace sprinkler heads | 0 | 1 | 2 | 3 | 4 |
| 13. | Calibrate sprayer | 0 | 1 | 2 | 3 | 4 |
| 14. | Become acquainted with weed and pest district policies and services | 0 | 1 | 2 | 3 | 4 |
| 15. | Apply herbicides and pesticides | 0 | 1 | 2 | 3 | 4 |
| 16. | Service and maintain equipment | 0 | 1 | 2 | 3 | 4 |
| 17. | Service small gas engines | 0 | 1 | 2 | 3 | 4 |

| | | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|---|
| 18. | Landscaping | 0 | 1 | 2 | 3 | 4 |
| 19. | Identify and classify plants, trees, shrubs and weeds | 0 | 1 | 2 | 3 | 4 |
| 20. | Turf management and lawn care | 0 | 1 | 2 | 3 | 4 |
| 21. | Understand plant adaption to climate condition | 0 | 1 | 2 | 3 | 4 |

APPENDIX B

LEADERSHIP AND SUPERVISED OCCUPATION EXPERIENCE

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| 1. FFA - Introduction to the FFA | | | | | |
| Be able to: | | | | | |
| a) Tell the history, aims and purposes of the FFA. | 0 | 1 | 2 | 3 | 4 |
| b) List the duties and responsibilities of FFA members. | | | | | |
| c) Recite the FFA Motto. | 0 | 1 | 2 | 3 | 4 |
| d) List the degrees and the requirements for each degree | 0 | 1 | 2 | 3 | 4 |
| e) List the duties and responsibilities of each FFA officer. | 0 | 1 | 2 | 3 | 4 |
| f) Recite creed. | 0 | 1 | 2 | 3 | 4 |
| g) List FFA awards available. | 0 | 1 | 2 | 3 | 4 |
| h) Complete a proficiency award application. | 0 | 1 | 2 | 3 | 4 |
| i) Complete a check of successful chapter application. | 0 | 1 | 2 | 3 | 4 |
| j) Explain that FFA is an integral prat of the Vo-Ag program. | 0 | 1 | 2 | 3 | 4 |
| 2. Leadership | | | | | |
| Be able to: | | | | | |
| a) Demonstrate proper parliamentary procedure use. | 0 | 1 | 2 | 3 | 4 |

| | | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|---|
| b) | List characteristics of a good leader. | 0 | 1 | 2 | 3 | 4 |
| c) | List the values of having leadership abilities. | 0 | 1 | 2 | 3 | 4 |
| d) | Rate yourself as a leader after taking the personality self rating scale. | 0 | 1 | 2 | 3 | 4 |
| e) | Read a speech and identify the introduction, body, and conclusion. | 0 | 1 | 2 | 3 | 4 |
| f) | Select a speech topic from the different divisions of the vocational agriculture program. | 0 | 1 | 2 | 3 | 4 |
| g) | Write a sentence outline of the speech from the information collected. | 0 | 1 | 2 | 3 | 4 |
| h) | Write a 6-8 minute speech. | 0 | 1 | 2 | 3 | 4 |
| i) | Deliver a 6-8 minute speech to the class. | 0 | 1 | 2 | 3 | 4 |
| j) | Evaluate a speaker. | 0 | 1 | 2 | 3 | 4 |
| k) | Participate in a group discussion. | 0 | 1 | 2 | 3 | 4 |
| l) | Prepare and deliver an extemporaneous speech on a specific topic in agriculture. | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| m) Select a career and obtain information pertaining to the selected career. | 0 | 1 | 2 | 3 | 4 |
| n) Evaluate personal habits associated with job success. | 0 | 1 | 2 | 3 | 4 |
| o) Prepare a resume. | 0 | 1 | 2 | 3 | 4 |
| p) Write a letter of application form. | 0 | 1 | 2 | 3 | 4 |
| q) Complete a job application form. | 0 | 1 | 2 | 3 | 4 |
| r) Make an appointment by phone. | 0 | 1 | 2 | 3 | 4 |
| s) Participate in a job interview. | 0 | 1 | 2 | 3 | 4 |
| t) Write a follow up letter. | 0 | 1 | 2 | 3 | 4 |
| 3. SOE | | | | | |
| Be able to: | | | | | |
| a) Plan and implement a supervised occupational experience program. | 0 | 1 | 2 | 3 | 4 |
| b) Complete a sample problem in the record book. | 0 | 1 | 2 | 3 | 4 |
| c) Complete all pages in the personal record book as they pertain to individual's projects. | 0 | 1 | 2 | 3 | 4 |
| d) Make entries on income and expenses pages. | 0 | 1 | 2 | 3 | 4 |

| | Does Not Apply | Not Important | Of Some Importance | Important | Essential |
|---|---|---|---|---|---|
| e) Figure depreciation using straight line and accelerated cost recovery system. | 0 | 1 | 2 | 3 | 4 |
| f) Determine salvage value. | 0 | 1 | 2 | 3 | 4 |
| g) Complete opening and closing inventories. | 0 | 1 | 2 | 3 | 4 |
| h) Close out record book at the end of the fiscal year. | 0 | 1 | 2 | 3 | 4 |
| i) Calculate unit cost analysis. | 0 | 1 | 2 | 3 | 4 |
| j) Evaluate SOE program for possible expansion each year. | 0 | 1 | 2 | 3 | 4 |
| k) Develop a budget. | 0 | 1 | 2 | 3 | 4 |
| l) Demonstrate acceptable personal appearance and personal hygiene for employment. | 0 | 1 | 2 | 3 | 4 |
| m) Plan a career in agriculture. | 0 | 1 | 2 | 3 | 4 |

APPENDIX C

EDVOC 791M, Section 2

Short Course: Developing the Competencies to be taught in Vocational Agriculture

June 18-22, 1984 - 2 credit hours

Instructor: Carl Reynolds

SCHEDULE

Monday, June 18

1:10 p.m. Orientation
Wyoming's agriculture
Agriculture's manpower needs
Wyoming's agricultural occupations
Developing competency list format
Select areas of responsibility
Review of task analysis
Identify sources of competency lists
Develop lists

Tuesday, June 19

9:30 a.m. Develop lists

1:10 p.m. Review lists with group

Wednesday, June 20

9:30 a.m. Complete lists

Develop validation process

Thursday, June 21

9:30 a.m. Visit employers, field test the lists and process

1:10 p.m. Compile field test results

Revise procedures

Friday, June 22

9:30 a.m. State Standards for Vocational Agriculture